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EXAMINER				
TAYONG, HELENE E				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/533,711

**Applicant(s)**

BIRRU, DAGNACHEW

**Examiner**

HELENE TAYONG

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6-14 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-14, 16-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This office action is in response to the amendment filed on 11/20/09.

Claims 1-4,6-14 and 16-22 are pending in this application and have been considered below.

***Response to Arguments***

2. Applicants arguments regarding the rejection of Claims 1-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Strolle et al (US 20040057535) have been considered but are moot in view of the new ground(s) of rejection because of amendments.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4,6-14 and 16-18 and 21-22 are rejected under 35 U.S.C. 103(a) as being obvious over Strolle et al (US 20040057535)

(1) with regards to claims 1 and 11;

Strolle et al discloses in (fig. 1) a system for multiplexed transmission of normal and robust digital video data (page 3, [0059]-[0060]), comprising:

a multiplexer switching ( fig. 2, 20) between normal and robust data inputs (page 3, [0062]);

one or more unit ( fig. 2, 22) randomizing, formatting, interleaving and encoding data from the normal and robust data inputs into encoded data packets ( page 7, [0087]); and

processing (fig. 2, 26) the encoded data packets by deinterleaving the encoded data packets, removing a trailing portion(The Reed Solomon decoder) from each encoded data packet, and derandomizing a remaining portion of each encoded data packet( page 7, [0088]-[0090]).

Strolle et al discloses all of the subject matter discussed above, but for specifically teaching wherein removing a trailing portion from each encoded packet includes removing parity bytes and removing encoded digital information bytes normal and the robust data input.

However, Strolle et al discloses a pre-processing and post processing ( fig. 2, 24 and 25, fig. 3, 314. The post processing performs reed-solomon (184-164) decoding (page 8, [0100]).

It would have been obvious to one of ordinary skill in the art to have utilized the method as taught in post processing to remove the trailing portion of the input data (normal/robust data) in order to recover data with minimal errors.

(2) with regards to claims 2 and 12;

Strolle et al further discloses wherein the multiplexer (fig. 2, 20), the one or more Units (fig.2, 22, page 7, [0087]), and the processing unit (26) form a portion of an enhanced vestigial sideband (VSB) encoder (10A), the one unit or more units further

comprising Reed Solomon encoder operating in sequence data from the multiplexer to generate the encoded data packets (page 7, [0087]).

(3) with regards to claims 3 and 13;

Strolle et al further discloses a parity byte generator (RS encoder) operating in conjunction with the trellis encoder to generate parity bytes for normal data switched by the multiplexer (fig. 2, page 7, [0087]).

(4) with regards to claims 4 and 14;

Strolle et al further discloses wherein the processing unit (fig. 2, 26) removes the trailing portion equal (all input packets) to a number of bytes required to form Motion Picture Expert Group (MPEG) compliant packets (page 7, [0088]).

(5) with regards to claims 5 and 15;

Strolle et al further discloses wherein the removed trailing portion (RS decoder) comprises parity bytes for data packets containing normal data and encoded data for data packets containing robust data (fig. 2, 26, page 7, [0088]).

(6) with regards to claims 6 and 16;

Strolle et al further discloses wherein the processing unit (fig. 2, 26) further comprises:

a bit-to-byte converter and trellis deinterleaver (The Trellis code deinterleaver) and a main deinterleaver ( convolutional deinterleaver) operating sequentially on data packets received from the one or more units ( fig. 2, 22, page 7, [0087]); and

a derandomizer operating on data packets after removal of the trailing portion ( fig. 2, 26, [0088]).

(7) with regards to claims 7, 17, 21 and 22

Strolle et al further discloses wherein the processing unit (26) forwards packets generated by the enhanced vestigial sideband encoder (22) to a standard vestigial sideband modulator (28) (fig.2, page 7, [0087]-[0088]).

(8) with regards to claims 8 and 18;

Strolle et al further discloses wherein the standard vestigial sideband modulator (fig. 1, 10, dif. 2, 28) further comprises:

a data randomizer, a Reed Solomon encoder, an interleaver and a trellis encoder operating sequentially on data packets received from the enhanced vestigial sideband encoder(fig.2, and page 7, [0078]);

a multiplexer switching (20) data packets generated by the standard vestigial sideband modulator with synchronization signals ( fig. 2, input to 26, frame sync); and

an antenna transmitting signals ( implicitly disclosed at output from fig. 1, 11 and received at 12, and fig. 3) corresponding to the switched data packets and synchronization signals ( page 3, [0059]-[0060]).

(9) with regards to claim 9;

Strolle et al further discloses a data link (fig. 1, input to 10) coupling the enhanced vestigial sideband encoder (Robust encoder) and the standard vestigial sideband modulator ( 8VSB Modulator)( 10), wherein the antenna transmits (implicitly disclosed , 11) , the signals over a wireless communications channel (12) to a receiver (13,14) ( page 3, [0059]-[0060]).

(10) with regards to claim 10;

Strolle et al further discloses wherein the enhanced Vestigial sideband encoder is implemented within a studio and the standard vestigial sideband modulator is implemented with a transmitter (figs 1 and 2).

5. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Strolle et al (US 20040057535) in view of Choi et al (US 7430251)

(11) with regards to claim 19;

Strolle et al discloses a system (fig.1) for multiplexed transmission of normal and robust digital video data ( input to 10), comprising:

an enhanced vestigial sideband (VSB) encoder (fig. 2, 10A) having normal and robust data inputs and including:

a multiplexer switching (20) between the normal and robust data inputs;

a data randomizer, a Reed Solomon encoder, an interleaver and packet formatter, a main interleaver and a trellis encoder each operating in sequence on data

from the multiplexer to randomize, format, interleave and encode data from the multiplexer and generate the encoded data packets ( fig. 2, 22 and page 7, [0087]); and

a processing unit (26) deinterleaving encoded data packets produced by the data randomizer, Reed Solomon encoder, interleaver and packet formatter, main interleaver and trellis encoder, removing a trailing portion from each encoded data packet, and derandomizing a remaining portion of each encoded data packet ( page 7, [0088]); and

a standard vestigial sideband modulator (fig. 1, 10, fig. 2, 28) receiving data packets from the enhanced vestigial sideband encoder (10A) and including:

Strolle et al discloses all of the subject matter discussed above, but for explicitly teaching

(a) wherein removing a trailing portion from each encoded packet includes removing parity bytes and removing encoded digital information bytes normal and the robust data input

(b) a data randomizer, a Reed Solomon encoder, an interleaver and a trellis encoder operating sequentially on data packets received from the enhanced vestigial sideband encoder; a multiplexer switching data packets generated by the data randomizer, Reed Solomon encoder, interleaver and trellis encoder with synchronization signals; and an antenna transmitting signals corresponding to the switched data packets and synchronization signals .

(i) with regard to item (a) above;



However, Strolle et al discloses a pre-processing and post processing (fig. 2, 24 and 25, fig. 3, 314. The post processing performs reed-solomon (184-164) decoding (page 8, [0100]).

It would have been obvious to one of ordinary skill in the art to have utilized the method as taught in post processing to remove the trailing portion of the input data (normal/robust data) in order to recover data with minimal errors.

(ii) with regard to item (b) above;

However, Choi et al, in the same endeavor (VSB transmission/reception system) discloses in (fig. 1) a conventional VSB transmission system that includes a data randomizer, a Reed Solomon encoder, an interleaver and a trellis encoder operating sequentially on data packets received from the enhanced vestigial sideband encoder; a multiplexer switching data packets generated by the data randomizer, Reed Solomon encoder, interleaver and trellis encoder with synchronization signals; and an antenna transmitting signals corresponding to the switched data packets and synchronization signals ( col.1, 38-49 and col.5, lines 66-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the system as taught by Choi et al, in the system of Strolle in a manner as claimed in this application, for the benefit of robust noise transmission system.

(2) with regards to claim 20;

Strolle et al further discloses wherein the enhanced Vestigial sideband encoder is implemented within a studio and the standard vestigial sideband modulator is implemented with a transmitter (figs 1 and 2).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lee (US 5619269) discloses Frame sync signal for digital transmission system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE TAYONG whose telephone number is (571)270-1675. The examiner can normally be reached on Monday-Friday 8:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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/Helene Tayong/  
Examiner, Art Unit 2611

January 30, 2010

/Shuwang Liu/

Supervisory Patent Examiner, Art Unit 2611